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ABSTRACT

A program of adult academic education and prevocational training for unemployed adult migrant and seasonal workers in central and south Florida is described. Classes were held at nine centers 5 days a week for a total of 420 hours of instruction, and a stipend was awarded to participants. The results of tests that sought the educational characteristics of the workers are given. The mean post-test scores and the mean gain scores indicated steady and significant growth in all areas measured--vocabulary, reading, computation, and problem solving. The answers to questions relevant to the adult migrant as a learner should, the author believes, lead to modification of present programs in adult basic education and to the development of further educational programs for adult undereducated migrant and seasonal workers. Tables are included. (NH)

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BASIC EDUCATION AND THE ADULT MIGRANT

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April 7, 1967 the Office of Economic Opportunity granted funds to the Florida State Department of Education for a program of adult education and prevocational training for adult migrant and seasonal workers in central and south Florida. The program was designed to last fourteen weeks. Classes were held for the students 6 hours per day 5 days a week for a total of 420 hours of instruction. All nine centers involved employed varying types of organizational plans. Not all included 14 weeks in the instructional period but all did include 420 hours of instruction.

The instructional time was evenly divided between the academic and prevocational phases of the program. The actual academic phase consisted of 210 hours of classroom instruction and the prevocational training phase matched this with another 210 hours of classroom instruction.

Adult migrants and seasonal workers, to be eligible for this program, had to be 18 years of age or older, unemployed, an agricultural worker, and the head of the household. Since this was a stipend program the participants had to be carefully screened and attendance was carefully checked.

The specific goals of this project were: 1. to reduce the incidence of illiteracy among adult migrant and seasonal workers. 2. provide these workers with a basic educational and occupational training program that would aid them to become more economically self-sufficient. 3. provide these adult workers with an educational opportunity to improve their salable job skills. 4. enable these workers to provide better parental guidance

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for their children, 5. be the basis for a more stable community and home environment, 6. improve health standards, 7. become more efficient and productive workers, 8. provide the workers and their families with an opportunity to become contributing members to society.

This program was put into effect in 9 centers during June, July, August, and September of 1967. These centers were all located in central and south Florida. The programs in some centers lasted 10 weeks while others continued for 14 or 16 weeks. All followed the basic curriculum guide devised by the Adult Basic Education group of the Adult and Veteran section of the Florida State Department of Education. This curriculum guide was constructed by Dr. Curtis Ulmer, the Project Director and State Coordinator of Adult Basic Education, Dr. Weldon Bradtmueller, Consultant in Adult Basic Education and Curriculum Coordinator for the Project, and Mr. Arthur Collier, Consultant in Adult Basic Education and Guidance Coordinator for the project.

The curriculum guide emphasized four areas: 1. Provide migrants with the rudiments of health and occupational skills. 2. Provide migrants with training in family and community relations and other essentials of day-to-day living. 3. Provide for job-occupational training within the migrants educational reach. 4. Develop computation and communication skills that will better provide fundamental knowledge and job orientation essential for effective functioning as a productive citizen in a democratic society.

The students were tested at most of the nine centers during the first week of the program and again during the last week. Each center was permitted to select their own testing instruments. At the suggestion of the State staff five of the centers used the Razoff-Neff test published by Follett and Company.

The Project group was used as part of the norm population for Form B of this instrument. Three of the centers used the ABLE test published by Harcourt, Brace, and World. One of the centers employed the Wide Range Achievement Test and several other standarized testing devices. As a result the useable data that can be statistically manipulated and for which complete sets of scores are available is 398.

Prior to the inception of this educational program several questions were raised concerning the educational characteristics of adult migrant and seasonal workers. Some of these were:

1. What is the present educational achievement level of the adult migrants?
2. Can the adult migrant be taught?
3. Is the adult migrant interested in learning?
4. How much academic progress will adult migrants make in a 10-14 week instructional period?
5. Will the adult migrant who scores high on the pretest make greater academic gains that one who scores low?
6. Will the adult migrant who scores high on the pretest score tend to maintain his position of relative academic excellence on the post test?
7. Will the student who scored highest on the post test make greater achievement gains than students who scored lower?
8. Will older or younger students make the most educational achievement growth?
9. Will students who completed more formal schooling as a child make greater academic growth than those who had less formal schooling?
10. Does the number of years an adult migrant has been out of school affect the amount of educational growth he will make?

Findings

The first question examined was number 4: How much academic progress will adult migrants make in a 10-14 week instructional period. Table 1 presents an analysis of the total group achievement.

TABLE I

Total Group Mean Gain Scores, Standard Error of the Difference and Values

Test	Mean Pre-test	Mean Post-test	Mean Gain	Standard Error of the Difference Between Correlate Means		
Vocabulary	4.4066	4.7656	.3590	.0636	5.645	.0001
Reading	3.9376	4.7652	.8276	.0696	11.891	.0001
Computation	3.9650	4.4920	.5270	.0633	9.036	.0001
Problem Solving	3.6142	4.2087	.5945	.0734	8.099	.0001

N=629

Table I presents the mean scores of the entire group that were tested by means of the Razoff-Neff test on both the pre and post tests. The total number of useable cases resulted in an N of 629.

This table illustrates the answer to question four and also answers questions 1, 2, and 3: 1. What is the present educational achievement level of the adult migrant? 2. Can he learn? 3. Is he interested in learning?

The mean pretest scores indicated that the students had an average education level of high grade 3 achievement. The teacher's observations and instructional placement records also confirmed this. Therefore, our earlier hunch that the majority of the students would fall at the third or fourth grade level of educational achievement proved correct.

The mean post test scores and mean gain scores indicated steady and significant educational growth in all areas measured. The smallest amount of growth occurred in vocabulary and the largest in reading. This seems almost an anachronism. But a quick look at the tests gives an indication of a possible explanation. The vocabulary words were presented in isolation and required a much more exacting knowledge of the word than did the reading task. The reading section of the test placed the words in context and therefore gave many more clues to the exact meaning as used. The arithmetic computation and problem solving gains were both significant and indicated steady progress.

The overall average achievement seems to be somewhere between .5 and .6 or about one half year's educational achievement in the 14 week period of time. This would seem to indicate that the adult migrant and seasonal workers are interested in education and can learn. In addition to this, many statements by the teachers indicated that the students were both willing and eager to learn.

The scores were all significant at the .001 level of confidence thus signifying that there were significant mean gains made in each of the four subject areas measured. These would all also seem to be practical mean gains because the smallest, vocabulary, is larger than one third of a year's growth and the largest, reading comprehension, is almost two-thirds of a year's growth. The smallest is as large as that expected of a normal group and the largest is more than twice that amount. The two arithmetic mean gain scores indicate better than five months growth in the 14 week period of time. These are equivalent to more than a half year's growth in achievement during the 14 week period.

The remaining questions:

5. Will the adult migrant who scores high on the pretest make greater academic gains than one who scores low?

6. Will the adult migrant who scores high on the pretest tend to maintain his position of relative academic excellence on the post test?

7. Will the students who scored higher in the post test make greater achievement gains than students who scored lower?

8. Will older or younger students make the most educational growth?

9. Will students who completed more formal schooling as a child make greater academic growth than those who had less formal schooling?

10. Does the number of years an adult migrant has been out of school affect the amount of educational growth he will make?

The intercorrelations between the mean pretest scores of the students and their mean gain scores is presented next.

TABLE II

The Correlation Coefficients between the Mean Pretest Scores and the Mean Gain Scores in Vocabulary, Reading, Computation, and Problem Solving.

	Vocabulary	Reading	Computation	Problem Solving
Pretest Vocabulary	-.38	-.007	-.20	-.08
Pretest Reading	-.12	-.26	-.19	-.15
Pretest Computation	-.13	-.06	-.44	-.18
Pretest Problem Solving	-.14	-.05	-.30	-.43

N=398 r.128 sig. at .01 level of confidence

The correlation coefficients in Table II seem to indicate that the higher the pretest level of achievement the smaller the amount of gain occured. The question being considered, number 5, essentially asks, "Who made the most gain, the students that scored high on the pretest or the students that scored low on the pretest?" This table indicates that the students who scored low on the pretest made the greater average gain in academic achievement. It should be noted that most of these correlation coefficients are statistically significant but that few are of practical significance (r.50 or higher). All are negative and most are quite low. This raises a question regarding the top average academic achievement level possible with this population. Perhaps the many years of environmental and educational deprivation have developed an educational potential that is depressed in comparison with the average adults. All the coefficients were negative and comparatively small. Therefore, broad generalizations must be made with caution.

Question six, what is the relation between the students' pre and post test scores, gives another view of the average academic gains achieved by the students. Did students who scored high on the pretest also tend to score higher on the post test in each of the four areas. Table III presents these data.

TABLE III

Correlation Coefficients Between Vocabulary, Reading, Computation, and Problem Solving Mean, Pretest and Post Test Scores.

	Vocabulary	Reading	Computation	Problem Solving
Pretest Vocabulary	.75	.57	.52	.63
Post Test Reading	.61	.71	.57	.61
Post Test Computation	.54	.54	.62	.50
Post Test Problem Solving	.72	.57	.61	.68

N=398 .128=sig. at .01 level of confidence.

The correlation coefficients in Table III are all positive and statistically significant. The size of these coefficients, all between .50 and .75 would also seem to indicate that practical significance is implied. The students who scored highest on the pretest also tended to score highest on the post test. While this finding seems to contradict the findings in Table II a close look at the data does not support this. Students who scored low in the pretests seemed to make greater achievement gains than students who scored high on the pretest tended to continue to score high on the post test even though their achievement gains were not as great. It would seem that students who start low on the educational scale made greater gains than students who started at a relatively higher point as measured. But the students who started at a higher achievement level tended to make enough growth to maintain a higher mean achievement level. For instance, a student who had a pretest achievement level in reading of 2.1 in reading made a gain of 1.0 to 3.1 while a student who had a pretest score of 4.1 in reading made a gain of .6 to 4.7. Therefore,

it would seem that the students did tend to retain their relative position of academic achievement as measured.

It is interesting to note the relationships between problem solving and vocabulary. The individuals who scored highest on the vocabulary test tended to also score high on the problem solving test and vice versa. The highest correlations occurred when the mean pretest scores and mean post test scores in each area were examined. Almost all the coefficients tended to be .50 and above. The relationships are fairly constant whether you compare the post test with the pretest scores or vice versa.

Question seven, "Will students who scored higher on the post test make greater gains in achievement than students who scored lower?" is discussed on the basis of Table IV.

TABLE IV

Correlation Coefficients Between Mean Vocabulary, Reading, Computation, and Problem Solving, Post Test Scores and Mean Gain Scores.

Post Test	Vocabulary	Reading	Computation	Problem Solving
Gain Vocabulary	*.25	.05	-.002	-.04
Gain Reading	*.15	*.40	*.17	.09
Gain Computation	-.06	.02	*.23	.07
Gain Problem Solving	-.05	-.03	.07	*.25

N=398 r.128 sig. at .01 level of confidence.

These data indicate that some students who scored higher on the post test made greater mean gains than students who scored lower. But in only six out of sixteen comparisons were these differences statistically significant. In only three cases, vocabulary and problem solving do gains approach practical significance. It seems interesting that the comparison of the mean gain scores with the mean post test score in each of the four areas measured gives the highest positive correlation. All of these are statistically significant and three are of practical significance. Four of the negative correlations occur when the computation, problem solving, and vocabulary scores relationships are examined. The other negative coefficient occurs when the relationship between reading and problem solving is examined. It would seem that students who made large gains in their reading skills did not tend to also make large gains in their problem solving skills and vice versa. This same statement is also true of vocabulary and computation.

The vocabulary and computation negative relationship seems more understandable than does the reading comprehension and problem solving relationship. Arithmetic computation can conceivably occur separate and apart from an ability to read words in isolation and assign the proper meaning to them. But the ability to solve problems requires a basic reading comprehension ability and would therefore seem to indicate that the achievement results of these two facets of the instructional program would be more closely related.

The last three questions raised deal with the demographic factors of age, amount of formal schooling, and years out of school. Let us first look at the relationship between these factors and the amount of gain.

TABLE V

Correlation Coefficients Between Vocabulary, Reading, Computation, and Problem Solving Gain Scores and Age, Grade Completed, and Years Out of School.

Gain	Vocabulary	Reading	Computation	Problem Solving
Age	.21	.49	.11	-.009
Grade Completed	-.13	-.07	-.13	-.12
Years Out of School	.19	.03	.16	.06

N=398 r.128 sig. at .01 level of confidence.

The data from Table V indicates no consistent pattern. Question eight which refers to the age of the student in terms of his achievement is given no clear cut answer by these data. They do seem to indicate that as the students became older they tended to also make greater growth in vocabulary, reading, and computation skills. Both the vocabulary and reading coefficients were statistically significant but only the reading was also of practical significance. (r.50+) The computation and problem solving relationships were too small to be of significance.

This would seem to indicate that the older students gained more in vocabulary skills and reading skills than did the younger students. Is this an indication that just plain living makes the students more receptive to instruction in these two types of tasks? Or, were the areas of vocabulary and reading stressed so much that the mathematics skills were slighted? A quick look at the preceding tables and the total group mean gain scores in Table I would not seem to indicate that this occurred. There is a consistently greater mean gain in reading but the same is not true in vocabulary.

The data presented in Table II, III, and IV reveal only slight differences favoring reading and vocabulary over computation and problem solving. These differences are not consistent.

What relationship does the grade completed in school bear to students' academic achievement? This relationship has been the source of much speculation and controversy. The data from Table V would seem to indicate a negative relationship. In other words the higher the grade completed in school the smaller the academic gains made by students in this project. Two of these are significant at the .01 level and two are not. Vocabulary and computation seem to bear the least relationship to previous schooling. Vocabulary could possibly continue to grow as the result of living. Computation skills may improve as the result of having to use them in order to live and hold a job. It would therefore seem that students who had less opportunity to go to school or did not go to school as children made greater academic progress than did students who had had this opportunity and took advantage of it.

The relationship between the amount of time that has elapsed since these students last attended school and the gains achieved reveals that there was a significant relationship between vocabulary and computation. There was no significant correlation between reading and problem solving. This would again seem to point up the fact that pure living seems to profitably affect vocabulary and computation but has an adverse effect on reading and problem solving. Or, to put in another way, vocabulary and computation skills continue to grow without further formal schooling while reading and problem solving skills will not continue to develop without instructional help.

TABLE VI

Correlation Coefficient Between Vocabulary, Reading, Computation, and Problem Solving Pretest Scores and Age, Grade Completed, and Years Out of School.

Pretest	Vocabulary	Reading	Computation	Problem Solving
Age	-.35	-.33	-.32	-.29
Grade Completed	.47	.51	.50	-.33
Years Out of School	-.36	-.37	-.37	.48

TABLE VII

Correlation Coefficients Between Vocabulary, Reading, Computation, and Problem Solving Post Tests and Age, Grade Completed, and Years Out of School.

N=398 r.128 sig. at .01 level of confidence

Post Test	Vocabulary	Reading	Computation	Problem Solving
Age	-.22	-.27	-.19	-.27
Grade Completed	.37	.41	.38	.40
Years Out of School	-.24	-.28	-.22	-.27

N=398 r.128 sig. at .01 level of confidence

Tables VI and VII show the relationships between the pre and post mean achievement test scores and the students' mean age, grade completed and years out of school. There is considerable agreement between Tables VI and VII. The data shows a negative relationship between age and years out of school and a positive correlation with grade completed. This indicates that the older the student is the lower his test score on both the pre and post tests. The students seem to remain at relatively the same position on the scale as

it relates to age on both the pre and post tests. All coefficients were significant at the .01 level of confidence.

The mean "years out of school" factor is also negatively correlated with both mean pre and post scores. The data indicates that the longer a student was out of school the lower his test scores. This was to be expected as lack of practice in the use of facts learned in school leads to much forgetting. Here too the relative position of the students seemed to remain stable between the two tests. All coefficients are negative and significant.

The relationship between mean grade completed and mean achievement test scores indicated a positive relationship. All the coefficients were significant at the .01 level and also indicate that the students retained their relative position on the academic achievements scale at each of the two testings.

It is interesting to note that the mean gain scores in Table V shows an inverse pattern of negative and positive relationship to those of Tables VI and VII. Age and years out of school indicate negative correlations on both tests but denote a positive correlation as to mean gains scores. This means that older students tended to score lower on the pre and post tests but made greater gains than did younger students. This was true in all areas but problem solving.

The mean "grade completed" factor indicates a positive correlation with mean scores on both the pre and post tests. But, a negative correlation between mean gain scores and the mean grade completed was noted. Thus it would seem that those who completed the most formal schooling tend to score highest on the tests but make the smallest mean gains. Those who had the

smallest amount of formal schooling scored lowest on the pre and post tests but seemed to make greater mean gains than those who had more formal schooling. This is difficult to explain. But, perhaps, those who had some school experience were approaching their top level of educability while others who had none were making great beginning strides. It is also possible that learning beginning tasks permits much more rapid growth than is usually thought while the students who already had some skills developed must maintain these and continue to grow which may be a harder task.

Conclusions

The data gathered during the Florida Adult Basic Education Migrant and Seasonal Workers Project in the summer of 1967 were used to answer ten questions relevant to the adult migrant as a learner. The answers to these questions should lead to modifications of present programs in Adult Basic Education and lead to the development of further educational programs for adult undereducated migrant and seasonal workers.

1. Educational programs for adult migrant and seasonal workers in Florida should be planned and formulated to educate students with an average educational achievement at the third level.

2. Adult migrant and seasonal workers can learn and seem to want an opportunity to learn.

3. The lower the mean level of educational achievement at the beginning of the program the greater the mean gain as a result of the program. Students who started lower in educational achievement tended to make more educational progress than did students who started at a higher educational level.

4. The adult migrant and seasonal workers tended to retain the same position of relative academic excellence. Those that scored higher on the pretests scored higher also on the post tests.

5. Older students tended to make more growth in vocabulary, reading, and computation skills than younger students.

6. The more formal schooling a student had received as a child the less the amount of educational gain achieved.

7. The longer a student has been out of school the greater his academic growth in vocabulary and computation but the smaller his academic growth in reading and problem solving.